

# Australian Standard™

AS 4046.6

## Methods of testing roof tiles

### Method 6: Determination of resistance to freeze/thaw

#### 1 SCOPE

This Standard sets out a method to determine the resistance of roof tiles to freeze/thaw.

#### 2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
2049	Roof tiles
4046	Method of testing roof tiles
4046.1	Method 1: Determination of distortion
4046.5	Method 5: Determination of permeability

#### 3 PRINCIPLE

A tile is maintained in a saturated condition and subjected to cycles of freezing and thawing until failure occurs.

#### 4 APPARATUS

The following apparatus is required:

- (a) Suitable freezing and thawing equipment capable of—
  - (i) reducing the temperature of the specimen from +20°C to –20°C in 2 h at a nominal rate of 1°C per 3 min;
  - (ii) maintaining the temperature at –20 ±2°C for 2 h;
  - (iii) increasing the temperature of the specimen from –20 C to +20°C in 2 h at a nominal rate of 1°C per 3 min; and
  - (iv) maintaining the temperature of the specimen at +20 ±2°C for 2 h.
- (b) A suitable form for the tile to ensure it is maintained in a saturated condition.

NOTE: A suitable form is shown in AS 4046.5.

#### 5 TEST SPECIMENS

The test specimens shall consist of the three remaining tiles selected for testing in AS 4046.1.

NOTE: In certain circumstances, AS 2049 makes provision for a retest.

#### 6 PROCEDURE

The procedure for each of the three tiles is as follows:

- (a) Saturate the tile by immersion in distilled water at 20 ±2°C for not less than 24 h and not more than 26 h.